

# AIRLINE REVIEW

NEW ZEALAND NATIONAL AIRWAYS CORPORATION



IN THIS ISSUE: FLY NORTH WITH NAC



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## COMPLIMENTARY ISSUE

Member



QUALITY IN AIR TRANSPORT

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### On Our Front Cover

NAC Friendship ZK-BXE in the new colour scheme recently adopted. Pages 8 and 9 show the Viscount also in this livery over the Canterbury Plains. All Friendship and Viscount aircraft will be repainted in this new colour scheme.

### On Our Back Cover

Sandy Bay, near Whangarei.

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## WHERE SUMMER LASTS

When winter winds blow and most of us wrap our coats a little tighter, thinking wistfully of warmer days, we could, if we but knew it, escape to a kinder climate, where flowers bloom all year round. This is no exotic tropical paradise far across the sea, but Northland, front doorstep of New Zealand, only a few hours by air from anywhere in the country. An exciting and totally different environment awaits visitors to this area, where the word "winter" has no meaning. Well, almost.

For some years Northland has been the nearly-exclusive playground of Aucklanders, but its undoubted scenic attractions and developing facilities are inevitably leading the area to its rightful place as one of our country's most popular holiday havens.

With the launching of NAC's Fly North for a Change campaign some ten months ago, South Islanders began to see and hear something of holiday attractions "up north." For the first time the north as a tourist destination is being promoted on a co-ordinated basis in a specific area—the South Island.





## LONGER

### FLY NORTH

Reciprocally, Aucklanders are being urged to fly south to the "mainland" for their holidays, and the middle-men to fly away—either north or south.

#### Gateway to Northland

For too many years New Zealand holiday-makers have known too little about Northland, that part of the country which extends as a peninsula from Auckland to North Cape. For years the friendly, colourful people of Northland farmed quietly at the ends of poor roads, with miles of empty golden beaches at their doorsteps. Then the north began to wake up and today is one of the most rapidly developing areas in the country. Indeed, Whangarei, "capital" of Northland, is the fastest-growing city in New Zealand, and within its boundaries lie almost \$8 million worth of industrial concerns. Whangarei's industrial expansion lead to a somewhat belated realisation of Northland's tremendous potential as a holiday destination. A missionary in 1882 described Whangarei as "an unsavoury swamp, unsuitable for white people to live or work." If that man could see the city today he would find he made a big mistake.

Whangarei is already known for the beauty of its parks and reserves, but its attractions are only beginning at that point. There are over 1,000 beaches within a day's drive from the city. Some are becoming well-known to the country's youthful surf-seekers; others like Te Arai Point, near Wellsford on the east coast, have remained charmingly unspoiled and almost unknown except to the local people.

A unique attraction at Whangarei is in the world-renowned collection of clocks built up over many years by the late Mr Archibald Clapham. The clocks—almost four hundred of them—tick on with a regularity which belies their age. Winding them takes several hours daily, and if they all struck the hour at once the din would be terrific.

#### Where History Began

Mileages seem to shrink north of Whangarei, and it's only a couple of hour's driving, at the most, between one place of interest and the next. It is a mere 43 miles of good road between Whangarei and Waitangi but motorists are well advised to proceed through Kawakawa at a leisurely pace in case they miss the turning to Paihai and Waitangi—anyway the railway also shares the main street.

Pahia is essentially a holiday resort, whose population is swelled by thousands during the summer. By day they swim, surf, sunbathe, or fish, and by night the more youthful "get with it" at dances, films, and other entertainment.

Those whose interests include history, cocktails or both, should not miss Waitangi, just over the bridge from Pahia. A wonderful variety of cocktails is a speciality at the Tourist Hotel Corporation's modern Waitangi Hotel, with its heated swimming pool and fine food.

The history of New Zealand as a British colony began not far from the hotel. Here on the green expanse of lawn in front of the Treaty House, Maori and Pakeha were first joined under British rule on February 5, 1840. Today a flagstaff marks the place where chiefs made their marks on the parchment paper document called the Treaty of Waitangi. Where chiefs once gathered visitors now roam. History lessons have a new meaning for children and parents thumb the guide books, trying to refresh their memories and answer a barrage of questions from their offspring.

An earlier, less peaceful history surrounds Russell, originally known as Kororareka, the first capital of New Zealand. A magnificent view of the compact township and the Bay of Islands is obtained from Flagstaff Hill, where the Maori chief Hone Heke made himself famous by cutting down the British flagpole four times. The tranquility of Russell belies its strife-torn past, of which little is visible save a few bullet holes in the outer walls of New Zealand's oldest church, and its graveyard where some of the casualties are buried. Modern activities centre around the waterfront where world record-breaking big game fish have been weighed, and little boys land man-sized catches from the wharf.

Russell is also the home of Fuller's launches



making the world-famous "Cream Trip" around the Bay of Islands, and could almost be nicknamed Fuller's town, as over 100 of the 650 permanent residents are employed by the company.

#### **First Plough and Oldest Buildings**

A delightfully tranquil area, where residents pursue an amazing variety of occupations at a leisurely pace is Kerikeri, on the Bay of Islands. Kerikeri means "to dig" and by strange coincidence it was here, in 1820, that a plough was first used to turn the soil of New Zealand. The district can also boast another, less earthy, "first"—it is the site of the first mission station and the oldest buildings in the country—the wooden Kemp homestead and the stone store. Both are in good condition and still occupied, the store containing relics including ledgers which show (bring back the good old days!) 25 pounds of flour at 4/6, 14 pounds of potatoes at 1/3, and one pound of salt at 1½d. But that was in 1887.

The temperate Northland climate makes Kerikeri a New Zealand citrus bowl. During the so-called winter months oranges ripen on the trees, and tamarillos, feijoas, and Chinese gooseberries are harvested.

Perhaps artistic talent flourishes in the warmth, too, for there are more artists, writers, sculptors, and potters per acre in Kerikeri than anywhere else in New Zealand.

A unique venture which is fast becoming one of Kerikeri's foremost attractions is Te Kainga O Tuarangī—a full-scale model of a Maori kainga or unfortified village. The project is the unaided work of two Pakehas who did considerable study on the Maori way of life, and erected the village using the same materials and construction methods as the ancient

Maoris. Everything has been made as authentic as possible and visitors gain a fascinating insight into the lives of the early Maori.

#### **Where Spirits Depart**

Today the Ninety Mile Beach stretching northward from Kaitia on the west coast is famous for the abundance of toheroas taken there during the season, but in Maori mythology the spirits of the dead padded up it on their journey to the underworld. Modern travellers can follow the footsteps of the spirits in the comfort of coaches leaving Kaitia for a day-long visit to Cape Reinga, jumping-off place on the journey to Hawaiki, the legendary Polynesian homeland.

Depending on the tides, one section of the journey is made on the inland road, and the other along the Ninety Mile Beach. Travelling along the inland road, the coach passes New Zealand's most northern school, post office, hotel, police station, and store. It is easy to understand how the mythological spirits must have felt, leaving civilisation behind on their long journey northward. However, the area is not uninhabited, and the driver entertains his passengers with stories about early settlers and gum diggers. At lovely Cape Reinga visitors may be guided through the lighthouse by friendly keepers.

The other portion of the trip is along the golden sands of the Ninety Mile Beach, the dunes dotted with huge mounds of seashells, the remnants of Maori feasts many years ago.

#### **City of the Gulf**

Contrasting sharply with the tranquility of Northland is Auckland—a big, busy metropolis offering a wealth of variety. Visitors to Auckland depart reluctantly wishing they could prolong their acquaintance with this delightful city.

Historic Treaty House, Waitangi







TAT amphibian over Auckland Harbour

With a population over 550,000, Auckland is New Zealand's largest city, sprawling over more than fifty extinct volcanoes and many picturesque bays. It is impossible to capture the essence of Auckland in a walk up Queen Street. Auckland is not only the "barndance"—where traffic lights turn red and pedestrians hurry across intersections in all directions; nor is it just the harbour bridge or the many coffee bars and restaurants.

While walking is an excellent way for visitors to absorb Auckland's charms at a leisurely pace, it's far more rewarding to take coach tours covering the city sights. But to appreciate the vastness of Auckland, nothing can match seeing it from the air. The added excitement of amphibian flying has made sightseeing flights, in Tourist Air Travel's little Grumman Widgeons one of Auckland's most popular tourist facilities. Take-off and landing is a thrill only those who have experienced the gush of water against aircraft windows can appreciate.

Any time of the year is the right time to take a TAT amphibian flight over the Hauraki Gulf—to get close-ups of the biggest islands—Rangitoto, rugged and barren, and Waiheke, dotted with houses and truly beautiful little beaches. Then on to Pakatoa Island, a recently-developed holiday resort, where accommodation is provided in inexpensive motel-type units; there's a store, squash courts, all the amenities of a licensed hotel and the clear waters of the Hauraki Gulf lapping the beaches.

Another exciting way of seeing the islands is on the hydrofoil, leaving from the heart of Auckland's waterfront.

### The Swing City

The mod generation can get "with it" in swinging Auckland—home of New Zealand's top "pop" groups.

Mod fashion boutiques have sprung up all over the city—the mini-skirt is "in" and nightly young people gather at dance halls and coffee bars to hear their favourite groups and the latest sounds.

Auckland boasts New Zealand's widest selection of evening entertainment. The city abounds with licensed restaurants, and a variety of good unlicensed eating places. On Friday and Saturday nights dance bands spring up in most of Auckland's licensed restaurants, and some places offer dancing and floor shows throughout the week.

### Living Within a Budget

The wide range of accommodation in Auckland offers something for every budget, from quiet family-sized private hotels, to luxury motel suites.

The needs of most people, however, will be met in the moderately-priced motels away from the city centre. With good rooms and off-street parking, many of these motels have restaurants and some offer heated swimming pools. In fact, many motels could be more correctly re-classified as motor hotels: interesting features at one of Auckland's newest motor hotels are 7.30am to 10pm continuous dining service and 24-hour room service for drinks and snacks, a development which brings it into line with the highest overseas standards.

Visitors will find a good selection of accommodation on the north shore—just over the bridge—placing them just a little closer to the scenic attractions north of the city.

### Variety of Attractions

A stroll up Queen Street gives no indication of the many lovely parks throughout the city. Only a few minutes from the bustling crowds are large expanses of greenery where flowers bloom in profusion, trees form arches over the footpaths, and little kiosks offer leisurely morning and afternoon teas in tranquil surroundings. Some of the loveliest views of the city are obtained from One Tree Hill and Mt Eden, extinct volcanic cones reserved as parkland.

The young and the young in heart will enjoy visits to the Auckland zoo and the rapidly-growing Museum of Transport and Technology, a paradise for the mechanically-minded. Here aircraft, trains, and motor vehicles of all kinds have been restored and put on display. A collection of old cameras and photographic equipment is included along with some early printing presses. For those interested in history there is Auckland's War Memorial Museum housing among other things, one of the country's finest collections of Maori artifacts.

### Fly North for a Change

First-time visitors to Auckland and Northland will certainly find changes from their home territory—wherever it may be. The north is like no other area in New Zealand—combining Auckland's sophisticated attractions with the quiet scenic beauties of Northland. People of all ages, whatever their tastes, will find plenty of variety in the part of New Zealand where summer lasts longest.





Tourist jet boats in the gorge of the Waimakariri river, Canterbury

## Jet Boating in New Zealand

By GUY MANNERING

Although the jet boat seems to be a natural progression from the screw as a jet aircraft from the propeller, it was a late developer. Even back to Archimedes, people experimented with forms of water jet for propulsion but without great effect. The first really successful unit was the product of the inventiveness of New Zealander, Mr. W. F. Hamilton. The drawing boards in the "little workshop half way up Mount Cook" on Irishman Creek station were the birthplace of the Hamilton marine jet in the middle fifties.

Rollicking streams fall from the Southern Alps and race across the wide spaces of the Mackenzie Country on the way to the Pacific. They bound, shallow and fast over stones eroded from the mountains. Roads seldom penetrate high into the valleys of these rivers so endowed with game and fine, wild scenery.

Bill Hamilton, farmer, industrialist, and racing-car driver, long recognising it is better to drive than to

walk, came up with a unit which could propel a boat up these turbulent waterways. No quiet pools for his experiments, he drove his infant boats in the bucking white water previously only the province of kyaks and madmen. During an early warm-up in a boat, the power of which barely kept it against the current, Bill noted how it thrust forward each time the stern became exposed in the turbulence and exhausted into the atmosphere. He resited the pump to draw water through a flush screen on the bottom of the boat and to expel the flow through the transom of the boat. This was a success. Now he had fine performance and no underwater appendage of any kind.

Although developed as a shallow-water river boat the craft soon showed ability to match propeller performance and to have unique characteristics; an almost unbelievable stability and ability to turn in its own length even at high speed.

An extravagant test quite early in development during 1960 was a spectacular success and brought off a journey not repeated since. Units used in boats built by the licensee manufacturer in America challenged the rapids of the Grand Canyon, often



attempted by outboards but never boated upstream. The jet boat triumphed, and three boats completed the run to Lees Ferry up 243 miles of the "worst water in the world." The New Zealanders in the expedition were jubilant and the Americans convinced now they had a "squirt boat that really works." A fourth boat in this expedition was lost when the hull split open in white water in a big rapid. This upriver run was considered the Everest of boating.

My own introduction to jet boating had come during tests of one of the first hulls in the gorge of the Waimakariri River in Canterbury. Bill Hamilton and Alf Dick were driving two boats which I would photograph in the grand gorge. During the day I was passenger with Alf who was determined to make the ultimate impression on me by choosing a course in which the stream fanned out so much as to expose the stones above the water surface just where it joined the main water over a slight bank. Of course, the obvious happened, the light-bottomed

ply boat failed and we splintered to a halt with stones and cameras jumbled in the bottom of the craft. Since that time, in strengthened fibreglass hulls I have often repeated this performance without similar consequences—skidding across the stones to regain the water and continue the journey.

During 1965 I travelled with four jet boats, a gift from the Government of New Zealand, to the Mekong river development scheme, one of the mightiest irrigation and hydro works ever devised. Survey work was well advanced, and with jet boats teams would be able to work in rocky rapids previously thought unboatable. During instruction to Asian pupils they piloted the boats through rapids in the river along the Thai-Laos border, navigating for the first time at low water and completed the first powered boat crossing of the Khone falls on the border of Laos with Cambodia.

Jon Hamilton, son of the inventor, and I had been together on the Grand Canyon expedition and in 1966 we were in New Guinea with an expedition of the Australian Bureau of Mineral Resources. With jet boats we penetrated miles farther into the river headwaters than ever previously possible. Natives who spoke pidgin called it a "shoot boat" and were bewildered by the ease with which we covered log-strewn forest streams in which they have to manhandle their own dugout canoes in low-water periods. Inhabitants of villages of the mountains who were meeting white people for the first time sat in the boats and covered their eyes in their folded arms, squealing with mixed terror and delight as we carried them on journeys in the wild water of the gorges. These mountain tribes have no water experience at all and do not build boats of their own, for the water is considered too turbulent and any journey would have to be only one way, downriver.

An association of jet boat owners formed five years ago in New Zealand now has more than 500 members, and the demand for jet power is developing rapidly. Currently on the Australian beaches a new form of sport boating is rapidly growing, jet powered surf boating. Initially designed for rescue work, this exciting medium is attracting sportsmen in the same way as jet boating did originally in New Zealand; its first devotees were back country sportsmen and fishermen.

Jet units are made under licence to the New Zealand parent company in several countries of the world and boats made in New Zealand are exported to far-flung corners including Terra del Fuego, Cambodia, Nepal, and Japan.

Jet boats are carrying tourists in thrilling scenic rides in New Zealand and many places in the world; they have been adapted to push rafted logs down rivers in lumber country, to supply firefighting in a high speed mobile harbour craft with water from the propulsion unit, even to dredge the river bottom through a suction nozzle for gold prospecting in mountain rivers.

The future for the New Zealand developed jet unit is assured.



A runabout showing distinctive jet stream of propulsion system

Space scientist Werner von Braun is introduced to jet boating by Jon Hamilton renowned New Zealand jet boat driver. Passenger looking on is Doctor Robert Gilruth















## KEEPING CULTURE ALIVE

*Haere mai ra, haere mai ra,  
Nga iwi o te motu nei  
Ki runga i te marae o Ngati Poneke*

Any Monday night you'll hear these words sung in beautiful harmony by members of the Ngati Poneke Young Maori Club, Wellington. They are the first few lines of a song of welcome to visitors. They mean:

*Welcome! Welcome!  
Ye People from afar  
To the courtyard of Ngati Poneke*

However, long before visitors are welcomed, club activities are well under way. Beginners' classes in haka, dancing and poi are taken by tutors from 7pm until 8pm. At 8.30 the senior practice begins.

The evening opens with the singing of the club hymn, Tama Ngakau Marie (Come to the Saviour), followed by Haere Mai Ra, the welcome to visitors, and several items. During a supper break visitors and club members mingle until the practice recommences.

The room is packed with people of all ages, both Maori and European. The sounds of talking and laughter fill the air. Strangers are quickly absorbed into a group, as if they were old friends. No one stands alone for long.

The practice continues. Although the only accompaniment is a guitar, the whole group keeps in time. The graceful movements of the action dances are a joy to watch. The singing is beautiful, with a harmony

of descants that only Maori voices seem able to achieve.

The practice is like that of any theatrical group—only perhaps a little more relaxed. Jokes are cracked, and the group dissolves into laughter, but seconds later all are back in position again, going through the intricate movements of an action song, poi dance or stick game. Suddenly the casual atmosphere is replaced by one of dedication to keeping the Maori culture alive. It shows on the faces of the members, absorbed in their actions, carried along by their words and music. Then someone gets out of step and in an instant the feeling is gone. Yet surely it is this feeling which has made Ngati Poneke one of the top Maori concert parties in the country.

The club has an impressive array of competitive successes in prestige events. These include a record eight prize-winning performances at the annual Maori Coronation Festival at Ngaruawahia. It won the cultural competitions at the Hui Rau Tau at Ngaruawahia, and further awards at the annual Hui Aroha of the Wellington Diocese. At the Wellington Competition Society's annual festival, it has won the Dominion Maori Choir Championship three times.

Although Ngati Poneke has never toured overseas as a club, few parties going overseas have not included members or ex-members of the club.



### Over 30 Years in Wellington

For over 30 years the Ngati Poneke Young Maori Club has served its local community, the Maori race, and the people of New Zealand. This unique, respected and now famous club is the only Maori cultural group with an unbroken history stretching for more than a quarter of a century.

The origin of the club's name stems from 1929 when the late Harry Wi Katene formed a cultural group which met on Sunday afternoons to practise. Harry Katene gave his group the name Ngati Poneke—Ngati meaning tribe, and Poneke being the Maori transliteration for Port Nicholson, the name given to Wellington by the early settlers.

The formation of the club was stimulated by Maori leaders who were troubled at the growing number of young Maoris coming to the capital and wandering the streets outside their working hours with little to do. They foresaw the need for an organisation where these young people could meet off the streets and practise the rich cultural heritage of their ancestors. Thus it was that the Ngati Poneke Young Maori Club, in the form in which it has continued to this day, was founded in 1936.

From the time of its founding until 1944, the club had held practices in private homes and halls all over Wellington. In recognition of its patriotic service during World War II, the then Prime Minister, the late Right Honourable Peter Fraser, officially handed over the present clubrooms, near the railway station in Wellington.

With the club installed in its own premises, a new era began, for now the club was truly able to become a marae (meeting place) and a home-from-home for the young Maori people of the Wellington area.

### Modern and Traditional Material

About one-third of the material used by Ngati Poneke is traditional music, chants, haka taparahi (war dance) and haka poi (poi dance). Interestingly, there are no traditional action songs—these are a modern development dating from post World War I.

Ngati Poneke, like many such clubs, has its own songs which were composed especially for it by members. However, because many of the older members are now living in other parts of the land some songs have gone out to other maraes and clubs to become part of the modern Maori musical repertoire. If a foundation member were to attend a concert today, he or she would be able to step right into many of the action songs. It is a comforting and endearing feature of the club—that members can be away for years, and yet return to familiar ground. There will be a certain amount of new material. However, because the club performs in public so much—more than any other group in New Zealand—the time to learn new material is very limited. Anyway, why throw aside that which is warm and colourful, and above all, loved?

### "Orphan" Membership

The club song, composed by a member and used as a "signature tune" for every performance, begins:

*We are members of Ngati Poneke,  
Young but ever hopeful,  
We are orphan members of the tribes  
Throughout Aotearoa.*

These first four lines sum up the essence of the club—it is essentially a young people's club with most members in their 20s or early 30s. The orphan members mentioned in the song are the young people who have come to Wellington and joined the club. Contrary to popular misconception there is no tribe called Ngati Poneke but the club members come from many different tribes from all over New Zealand. The strongest ties are naturally with the largest centres of Maori population—Gisborne and the East Coast, the Bay of Plenty, Hawke's Bay, and Northland.

They come from a wide variety of occupations. Among the men are a bus driver, prison officer, teacher, plasterer, and accountant. The women include a milliner, a toll operator, an NAC reservations clerk, a shop assistant, a Social Security welfare officer, and several housewives. Attendance naturally fluctuates. However, despite the counter attractions of TV and other sophisticated entertainments, the club averages about 70 performing members at practices.

### Many Requests

The club is financed by subscriptions, fund-raising public concerts, and by donations. No charge is made for performances for any charitable, civic, patriotic or similar public cause.

Requests to perform are received from as far north as Palmerston North or Gisborne, and from as far south as Christchurch, averaging almost two a week. Recently, the Atlantic Union Oil Company chartered an NAC aircraft to take the club to Christchurch to perform at the closing ceremony of the International Ploughing Championships. Another NAC charter took members to Gisborne where they gave two concerts.

The size of a Ngati Poneke concert party depends on the occasion. A major concert or competition performance on a large stage may see up to 80 people in the group, whereas a demonstration at an embassy function may call for only six.

The club looks ahead with hope and enthusiasm. The immediate goal is the building fund. The club's present premises will have to be demolished within two or three years, and the aim is a new Ngati Poneke centre.

Despite changing times and membership, the Ngati Poneke Young Maori Club continues its mission of preserving and teaching the songs, dances and stories of the Maori people.







# OUT INTO INNER SPACE

By Dr Willem J. M. van der Linden

The challenge of travel by sea was taken up at the dawn of civilization and primitive floats and later manoeuvrable ships carried man safely over its deeps. It was soon realised that the waters were teeming with life that provided a rich source of food, and the ability to harvest the sea is as old as mankind.

Gradually over the years the sea was conquered; it no longer acted as a barrier but was the highway of inter-continental transport, becoming our ally rather than our foe. Occasionally, even now, it claims its victims—sometimes even in disastrous numbers—but no longer does a sailor anticipate imminent danger looming over the horizon.

But *have* we conquered the sea? Has the challenge been taken out of it? Do we understand its moods? Are we using its resources to their full extent? What lies beneath the waters? What are the mineral potentials of the ocean, its water and its floor? These, and other questions are a challenge to scientists all over the world. In the last decades we have come to realise the importance of the sea for our everyday life; but we know relatively little about this huge domain which occupies 70 percent of the surface of our planet.

But this unsatisfactory lack of knowledge is already changing very fast. We have entered the "era of the sea"; the activities that are now going on will have an enormous impact on sociology, demography, politics, warfare, economy, and science. By now fleets of larger and smaller ships of many nations are "in orbit" exploring "inner space."

Amidst the activities of the great nations that are pouring millions of dollars into marine research, New Zealand plays a modest role which is nevertheless important because of its relatively easy access to one of the most interesting parts of the world's oceans. Water masses of such remote origins as the central Pacific and the sub-Antarctic seas meet and mix near New Zealand at the Subtropical Convergence. The varying physical properties of these water masses over this relatively small area are reflected in the variety of the marine fauna.

## The Sea Floor

By far the most interesting aspect of the marine environment near New Zealand, however, lies in the configuration and structure of the sea floor. Thanks to the depth measurements by means of echo sounding that have been taken in the last decade or so, a detailed chart showing the diversity in ocean bottom configuration is now available.

New Zealand lies at the junction of two major structural provinces, one with a dominant NNE-SSW trend, the other with general NW-SE to W-E directions. The former province, in line with the length of New Zealand is characterised by steep slopes, volcanic and earthquake activity and by deep trenches of which the dominant one is the Tonga-Kermadec Trench, reaching maximum depths of over 35,000 feet. The other province consists of a series of major elevations, the Lord Howe Rise, the Norfolk Ridge, the Chatham Rise, and Campbell Plateau. They extend between New Guinea and New Cale-

donia in the north and the Sub-Antarctic Slope, a major structural feature east of New Zealand. They form a series of parallel submarine "mountain-chains" bordering the Tasman Sea and are comparable in size and extent to the largest mountain ranges in the world. Sedimentation, the accumulation of dead organisms and to a lesser extent of the erosional products of nearby land masses, has in many millions of years smoothed the original rugged topography. With modern geophysical equipment, however, it is possible to "look" through this blanket of sediment which in places is thousands of feet thick. Numerous fracture and shear zones divide the area into separate blocks and define the crustal stress and strain pattern.

## Gondwana

Gradually, the geological history of this part of the southwest Pacific is being unravelled. It is becoming clear that at one time primeval New Zealand, Australia, and Antarctica were part of a large southern continent, Gondwana, which was disrupted in time by processes active in—and below—the earth's crust. The moving apart of individual blocks was directed away from so-called mid-oceanic ridges. They are the locus of molten rock welling up from below the earth's crust, spreading laterally on either side, and so rejuvenating the skin of our planet. Those of influence on the structure of the southwest Pacific are the Indian-Antarctic and Pacific-Antarctic Ridge and, perhaps, also a north-south trending ridge system in the central Tasman Basin. The most conspicuous scar in the area testifying to the drift-apart of huge crustal blocks is the earlier mentioned Sub-Antarctic Slope which marks the former link between the New Zealand Plateau and the Antarctic continent. While the individual elements drifted apart, new ocean basins were created which in turn passed through stages of sediment accumulation, "mountain building", sub-aerial elevation, erosion, subsidence, faulting, and volcanic activity.

The variety in morphology combined with the different crustal processes that were and are still active both on land and beneath the sea make the New Zealand area these days the focal point of research activities of oceanographers from all over the world. Current marine geological and geophysical programmes in the area will contribute substantially to the understanding of the processes that continuously shape and reshape the face of the earth.

Armed with new knowledge and techniques, undersea riches are now coming within man's grasp. The prospects around New Zealand are not unfavourable and the near future may see mining taking place in the shelf area. Occurrences of phosphate, manganese, and heavy minerals have been indicated and oil and gas strikes are not unlikely. Further research is needed, however, to ascertain the economic values.

Although man's relation to the sea may still be that of a primitive hunter, the age of discovery has begun. It is clear that inner space exploration, essential for survival, will ultimately lead to improved conditions in a better world.



# Tamerau: New Zealand's First Flying Man

By C. Kingsley-Smith

Through the ages, the yearning of mankind to "rise on the wings of the morning" and take to the air like a bird has given rise to countless legends.

From these stories arising from the dim period known as "the dawn" almost every race has its quota of airborne heroes who soared aloft, some of them astride prancing, white-winged steeds, to achieve the matchless deeds that gave them immortality.

Within more memorable distance, in fact little more than a hundred years ago, many of our own ancestors believed implicitly that witches rode on broomsticks to cleave the pungent ozone arising from their votive fires.

But in New Zealand we can borrow as well from our Maori legends and find quite a bountiful harvest of aeronauts. Most of them were demigods; their deeds have that mystical ring of the make-believe that renders them unique. Maui, for instance, strode into the realms of Rangi to lasso the sun; Tawhaki flew to the Maori heaven—only to be hurled to earth and dashed to death, his blood staining the blossom of the pohutukawa and rata trees forever more.

One of the quaintest tales concerns Tamerau. He lived at Ohiwa, in the Bay of Plenty, in the pre-Great Migration days. He gained his wings almost by accident in a story which has all the ingredients of jealousy and intrigue so essential in a first-class legend.

There is little doubt that such a man really lived; we can still see both the cave in which he lived, and the spring which gushed from the hillside when (as we shall learn) he flung away the dried kumara spurned by his brother, Rawaho.

In the days when the Tangata-whenua peopled the East Coast, a certain patriarch named Hape, had captained the Rangimatoru canoe from Hawaiki and brought it safely to Ohiwa. There on the land-locked harbour he and his people settled in idyllic surroundings.

The kumara and taro which they had brought with them grew well in the new soil and gave abundant crops for Hape, being a tohunga (priest or holy

man) also possessed the "mauri" or the reproductive, life-giving essence to these important vegetables.

Hape also kept an eye on the elusive pounamu (greenstone or jade) which in those days of simple magic, was mobile enough to move from place to place. It had to be chased to give up its beautiful green splinters from which were fashioned the gleaming ornaments so prized by the Maoris.

It had already fled Tohua (now Mayor Island) and established itself on the cliffs of steaming Whakaari (White Island). After tasting the fury of a mighty eruption from the island volcano the terrified jade children fled south for their lives.

After them raced Hape, leaving the Bay of Plenty, but taking with him, even in his haste, the vital mauri of the sweet potato. The result was drastic in the extreme, for the next crop at Ohiwa was an utter failure. The fleshy kumara stringers were merely shrivelled bits of root.

And Hape failed to return.

After the second season had given even worse results from the kumara beds, Hape's two sons Rawaho (the elder) and Tamerau decided to go in search of their father and save the tribe from starvation.

Southward they marched, inquiring of the tribes through which they passed. No one had seen Hape! They crossed Cook Strait on the back of the great eel-god Puhi, and stalked the western ranges, until they met a people of the coast, who had known and liked Hape.

Hape had died, they said. He had been such a great tohunga that they dared not touch his body. They pointed to a ruined whare, wherein, they indicated, the body still lay.

It was then Rawaho made his first mistake. Being the eldest son of a tohunga he knew that he could not dare approach the body of his father without the necessary ceremony of incantation. He sat on the ground and sank into a deep meditation.

But Tamerau, younger and impetuous, was made of sterner stuff. Leaving his brother he strode boldly up to the ruins, made his way inside, and found the



shrivelled corpse of his father. He leaned forward and bit its ear and thus felt its mana surge into his own body. So it was that he absorbed the supernatural powers of his father.

Quickly he took the two belts that held the sacred kumara mauri, and arranged them round his own waist, beneath his piupiu. Next he left the house of death and approached his crouching brother still engrossed in his incantation.

"Your chant is overlong, my brother," he said, "end it now, for the powers of our father have come to me."

Rawaho rose up in wrath and, entering the ruined whare, saluted his father's body and addressed it. But he failed to invoke the latent powers to himself.

Hiding his disappointment, and inwardly vowing vengeance, he ordered his brother to make ready for the homeward journey. On the long northward trek he vowed he would have his revenge. Without incident they reached Te Whanganui-a-Tara—the great harbour of Tara (now Wellington). To emphasise his seniority Rawaho made his brother carry all the food. Tamerau soon lagged far behind. Rawaho impatiently called on him to hurry—he was a weakling and a tutua (second-rater). Nettled, Tamerau suddenly called upon all the powers he had inherited from his father's gods and rose gracefully into the air like a crested heron. He found he could steer himself at will.

The sweating Rawaho was quenching his thirst at a still pool, when a shadow passed overhead, and he caught the reflection of Tamerau.

He looked up in amazement.

Tamerau hovered, and then landed gently as a feather at his side, smiling happily as though he had been used to this type of automation all his life.

Seething with jealousy, Rawaho demanded food. Tamerau broke off some of the dried kumara belt he wore and gave it to him. No other words were spoken.

Then as the elder brother moved on again Tamerau soared aloft once more, to dart ahead of the fuming Rawhao, and point out the direction to the Kaiangaroa

Plains, or find an easier track.

When they arrived at the borders of the Rangitaiki, they entered the narrow Waihou Valley which is cradled between the Urewera and plains.

Here Rawaho quickly ordered Tamerau to earth. He was hungry again. He wanted food!

When Tamerau coolly broke off some more kumara and handed it to him, Rawhao burst into a storm of jealous rage. Seizing the food he flung it to earth, and was about to fall on his brother with his mere. Then from the very place where the kumara had landed, gushed a cool spring of glistening, crystal-clear water. Into the fast expanding pool the dried kumara took its root, growing and flourishing before his eyes.

This was too much for Rawaho, who now recognised his brother's great power. He left him, and half running, made off at a great rate for the coast. Overhead hovered the obliging figure of Tamerau, pointing out the easiest way, and commiserating at every hazard and fall.

But Rawaho had not the face to go onto Ohiwa where his people dwelt. He stopped at Te Teko near the hills of Manawahe. It was therefore Tamerau who travelled the easy way and alighted on the island of Ohakana in the inland harbour. It was he, too, who handed over the mauri, and brought back once more the lush unfailing kumara crops as of yore.

He became the hero of his people, his deeds to become celebrated in song and story wherever the people of Mataatua foregather.

Rawaho, the bitterly disillusioned brother, eventually accepted his secondary role and settled at Hiwarau, there to live and quietly die as the brother of the great Tamerau.

Tamerau chose to live for some time in a cave on his beloved Ohakana Island, from which he often rose into the heavens; sometimes, it is claimed, accompanied by a deep clap of thunder. Later he lived at Ruatoki, where people still point to the hill from whence he finally took his final flight to Reinga.



